

REMARKS/ARGUMENTS

Claims have been amended to address informalities. Claims have all been amended to recite a folding apparatus having a pair of rollers (a combination) rather than the sub-combination of a roller. Claims 6 and 7, relating to use of the folding roll in a folding apparatus, have accordingly been cancelled, thereby overcoming the rejection under 35 USC 112, second paragraph.

Claim 1 stands rejected as anticipated by Tabei et al. JP 61-199958; this rejection is traversed for the reasons following. Tabei discloses applying a mask to a metallic cylinder by optical methods, thermally spraying a metallic powder on apertures in the mask, and removing the mask by melting to leave an uneven pattern of thermally sprayed areas. The materials and the thicknesses are not disclosed in the abstract, but the title is “embossing roll”, so there is certainly no suggestion that the roll would be used with another roll in a folding apparatus. It is also clear that the features of applicants’ dependent claims, which are very specific to high friction folding rolls, are not suggested.

Claims 1-3, 6 and 7 stand rejected as anticipated by Tubota US 5,071,083. This rejection is traversed for the reasons following.

First of all, the roll disclosed in Tubota is not used in a folding apparatus, but is used as a touch roller for polymer film. The roll disclosed in this reference can be fully distinguished from applicants’ rolls as claimed, based solely of the features of the roll.

Tubota discloses a roll having a matte surface which is produced on the surface of a roll by etching or sandblasting; it is not a layer of friction material which is added by any method, least of all flame spraying. The matte surface has a roughness of less than 2 μm ; it is specifically stated that greater surface roughness can result in damage to the film. This is in sharp contrast to

applicants' flame sprayed layer, which has a surface roughness of up to 0.2 mm, which is 200 μ m or 100 times the roughness of Tubota's matte surface. Tubota's surface would not have sufficient friction properties for use on a roll in a folding apparatus, and applicants' roll would destroy Tubota's film.


The examiner states that the patentability of a product does not depend on its method of production, citing *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), and *In re Pilkington*, 162 USPQ 145, 147 (CCPA 1969). These cases explain when a "product-by-process" claim is patentable. Basically, in order to be patentable, the product must have structural characteristics that distinguish it from the prior art. It cannot be the same as or obvious from the prior art product. In *Thorpe*, the product, though made by a different process, was no different than the product made by a prior art process. Thus, the claims were held to be unpatentable. In *Pilkington*, on the other hand, the product (plate glass manufactured on a bed of molten metal), the claims were found to be patentable because the glass itself was different from the prior art plate glass made with rollers. This is the seminal case on product-by-process claims, and is still good law.

Product-by-process claims are useful when the process of manufacture imparts unique and useful characteristics to a product, but there is no easy way to describe those characteristics besides referring to the manufacturing process. Such was the case in *Pilkington*, and such is the case here. The flame spraying process produces a frictional layer having proper ties which readily identify it as having been flame sprayed. The spraying process is useful because it can be applied through a mask, resulting in any desired pattern, and further because it produces a desired high roughness which makes it suitable as a friction surface for a moving paper web.

The claims as presently amended being definite and patentable over the art of record, withdrawal of the rejections and early allowance are solicited. If any objections remain, a call to the undersigned is requested.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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